CLAIMS

We claim:

1. A system comprising:

a wavelet style coder to compress image data using reversible embedded wavelets;

a binary style coder to compress image data using a binary coding scheme; and

selection control coupled to select the wavelet style or the binary style.

2. The system defined in Claim 1 wherein the wavelet style coder comprises

a reversible wavelet transform;

an embedded order quantizer coupled to the embedded quantizer; and

a context model coupled to the embedded quantizer.

3. The system defined in Claim 1 wherein the wavelet style coder further comprises an entropy coder.

4. The system defined in Claim 1 wherein the binary style performs Gray coding.

5. The system defined in Claim 1 wherein the wavelet style and the binary style share an encoder.

6. The system defined in Claim 1 further comprising an entropy coder.

7. The system defined in Claim 6 wherein the entropy coder comprises a finite state machine coder.

8. The system defined in Claim 7 wherein the finite state machine coder comprises a look-up table.

9. The system defined in Claim 6 wherein the entropy coder comprises a Q-coder.

10. The system defined in Claim 6 wherein the entropy coder comprises a QM-coder

11. The system defined in Claim 6 wherein the entropy coder comprises a parallel coder.

12. A system comprising:

a reversible wavelet transform;

an embedded order quantizer coupled to the reversible wavelet transform;

a context model coupled to the embedded order quantizer;

an embedded binary style coding mechanism; and

an entropy coder coupled to the context model and the embedded binary style coding mechanism, wherein the reversible wavelet transform,

the embedded order quantizer, and the context model are operable to compress image data using reversible embedded wavelets and the binary style coding mechanism is operable to compress image data using a binary coding scheme; and

selection control coupled to select the wavelet style or the binary style.

13. The system defined in Claim 12 wherein the binary style performs Gray coding.

14. The system defined in Claim 12 wherein the entropy coder comprises a finite state machine coder.

15. The system defined in Claim 14 wherein the finite state machine coder comprises a look-up table.

16. The system defined in Claim 12 wherein the entropy coder comprises a Q-coder.

17. The system defined in Claim 12 wherein the entropy coder comprises a QM-coder

18. The system defined in Claim 12 wherein the entropy coder comprises a parallel coder.

19. The encoder defined in Claim 17 wherein the forward transform comprises a reversible wavelet.

20. A system comprising:

a histogram compaction mechanism;

a reversible wavelet transform coupled to the histogram compaction mechanism;

an embedded order quantizer coupled to the reversible wavelet transform;

a context modeling mechanism coupled to the embedded order quantizer; and

a coder coupled to the context modeling mechanism.

21. The system defined in Claim 21 wherein the histogram compaction mechanism comprises a Boolean histogram.

22. The system defined in Claim 20 wherein histogram compaction mechanism maps integer values to all possible pixel values in the image data.

23. The system defined in Claim 20 further comprising a decoder and a signaling mechanism coupled to signal the decoder with a mapping employed by the histogram compaction mechanism.

24. The system defined in Claim 23 wherein the mapping is signaled in a header included with compressed data received by the decoder.

25. The system defined in Claim 23 wherein a bit in a header indicates to the decoder indicates, if set, that a different histogram is used for the current tile.

26. The system defined in Claim 23 wherein the decoder is signaled by sending a number of bits equal to the dynamic range of the values, and each bit in the number of bits is set if its corresponding value in the dynamic range is used.

27. A system comprising:

a memory storing a codestream with a header having at least one marker;

at least one output device;

a parser coupled to the memory and coupled to receive device characteristics from said at least one output device, wherein the parser is operable to perform device-dependent quantization.

28. The system defined in Claim 27 wherein the codestream comprises lossless compressed image data.

29. The system defined in Claim 27 wherein said at least one marker indicate the number of components, any subsampling, and any alignment used for every tile in codestream.

30. The system defined in Claim 27 wherein the codestream includes a main header and each tile in the codestream is preceded by a local header.

31. The system defined in Claim 30 wherein the main header applied to all tiles in the codestream and each local header only applies to its associated tile.

32. The system defined in Claim 31 wherein at least one of the local headers overrides the main header.

33. The system defined in Claim 27 wherein the parser uses markers in the codestream to quantize the codestream.

34. The system defined in Claim 33 wherein at least one of the markers indicate frequency information.

35. The system defined in Claim 27 further comprising a compressor to create the codestream.

36. The system defined in Claim 27 wherein the parser comprises a quantization selection apparatus.

37. The system defined in Claim 36 wherein the quantization selection apparatus transforms and quantizes a set of image by discarding bitplanes of various coefficients.

38. The system defined in Claim 27 wherein one of the tags indicates importance levels within the data in each tile.

39. The system defined in Claim 27 wherein the tag indicates importance level locator signals by which the parser truncates.

40. The system defined in Claim 27 wherein the tag indicates the number of importance levels to be kept.

41. The system defined in Claim 27 wherin the tag indicates the number of bytes to keep.

42. The system defined in Claim 27 wherein the tags includes indication in each tile associates the number of bytes with the importance level.

43. The system defined in Claim 33 wherein at least one marker indicates the number of bytes of an importance level in each tile.